

VIRGINIA ARBOVIRAL ACTIVITY IN 2005

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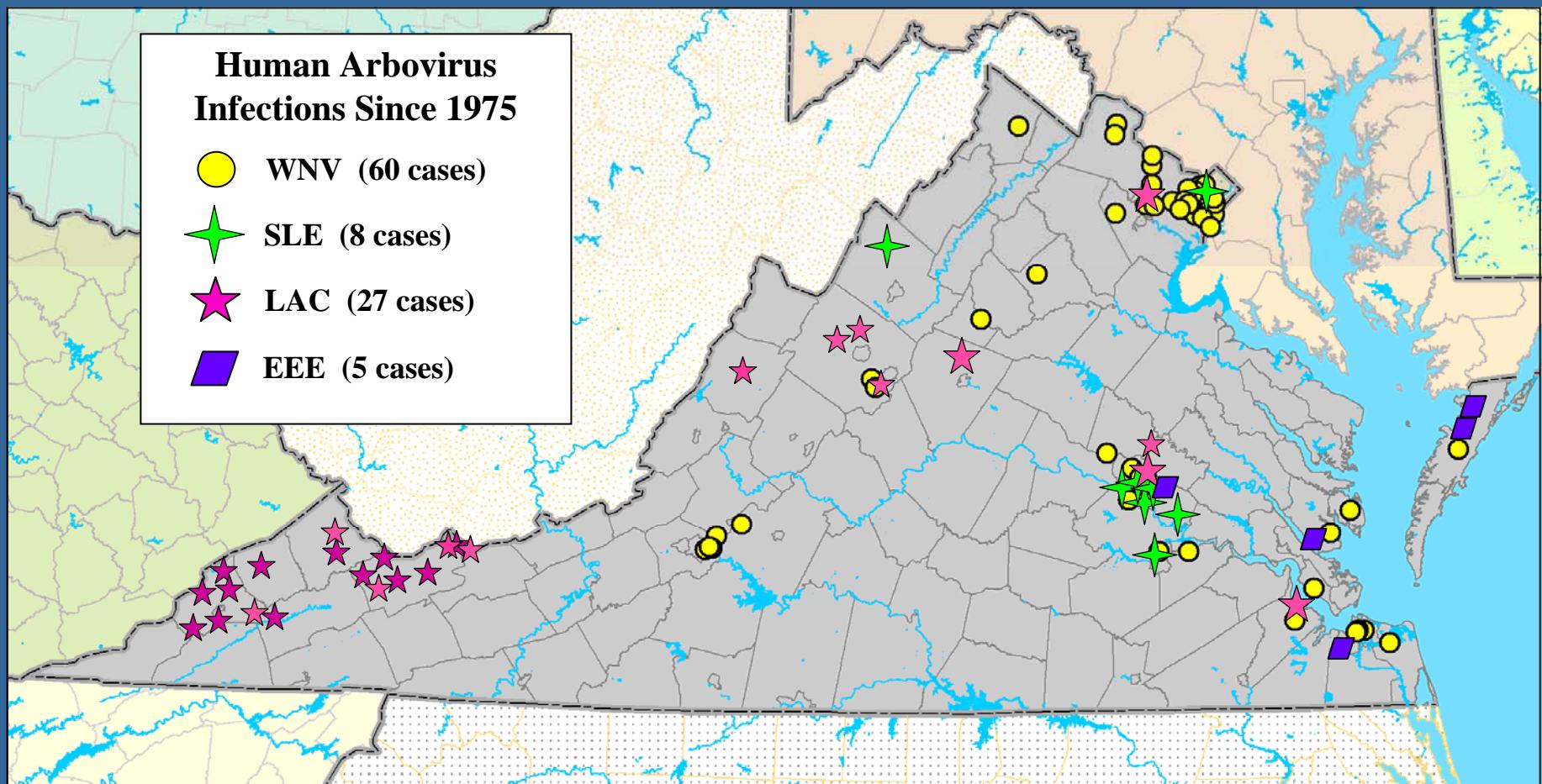


30 YEAR HISTORICAL PERSPECTIVE OF HUMAN ARBOVIRAL INFECTIONS IN VIRGINIA

Human Arbovirus Cases Recorded in Virginia Since 1975 (number of cases per 5 - year period)

	1975 to 1979	1980 to 1984	1985 to 1989	1990 to 1994	1995 to 1999	2000 to 2004	30 YEAR TOTAL
<u>Eastern Equine Encephalitis (EEE)</u>	2			1	1	1	5
<u>LaCrosse Encephalitis (LAC)</u>			1	1	12	9	23
<u>St. Louis Encephalitis (SLE)</u>	5			1	1	1	8
<u>West Nile Virus (WNV)</u>						60	60

Geographic Distribution of Human Arbovirus Cases Recorded in Virginia Since 1975



ARBOVIRAL ACTIVITY IN VIRGINIA IN 2005

Arboviral Activity Detected in Virginia in 2005

Mosquito Surveillance

312 WNV positive mosquito pools

131 EEE positive mosquito pools

Wild Avian Surveillance

16 WNV positive birds

Sentinel Chicken Surveillance

6 flocks, 7 birds WNV positive

27 flocks, 97 birds EEE positive

Equine Surveillance

1 WNV positive equine (Pr. William Co.)

6 EEE positive equines (Chesapeake - 4, Suffolk -1, Sussex Co.- 1)

Human Case Surveillance

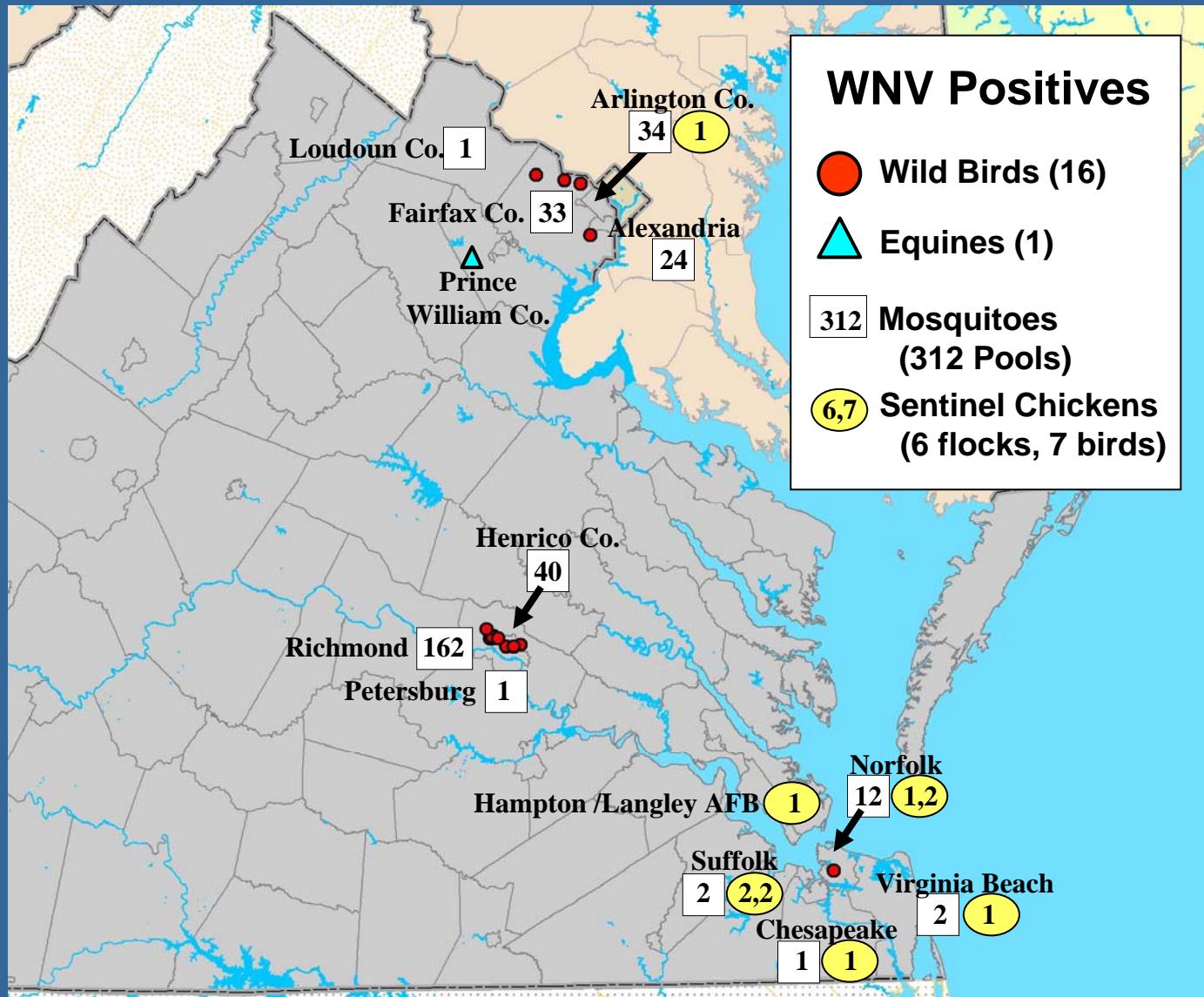
4 La Crosse positive cases (Fairfax Co., Albemarle Co., Henrico Co., Isle of Wight Co.)

WEST NILE VIRUS IN VIRGINIA IN 2005

Virginia WNV Positive Totals, 2001 through 05:

	2001	2002	2003	2004	2005
1. Humans:	0 cases	29 cases (2 deaths)	26 cases (1 death)	5 cases (1 death)	0 cases
2. Birds:	212	932	1,041	25	16
3. Sentinel Chickens:	1 flock 1 bird	6 flocks 10 birds	21 flocks 54 birds	18 flocks 29 birds	6 flocks 7 birds
4. Horses:	6	48	234	15	1
5. Mosquito Pools:	1	223	432	430	313

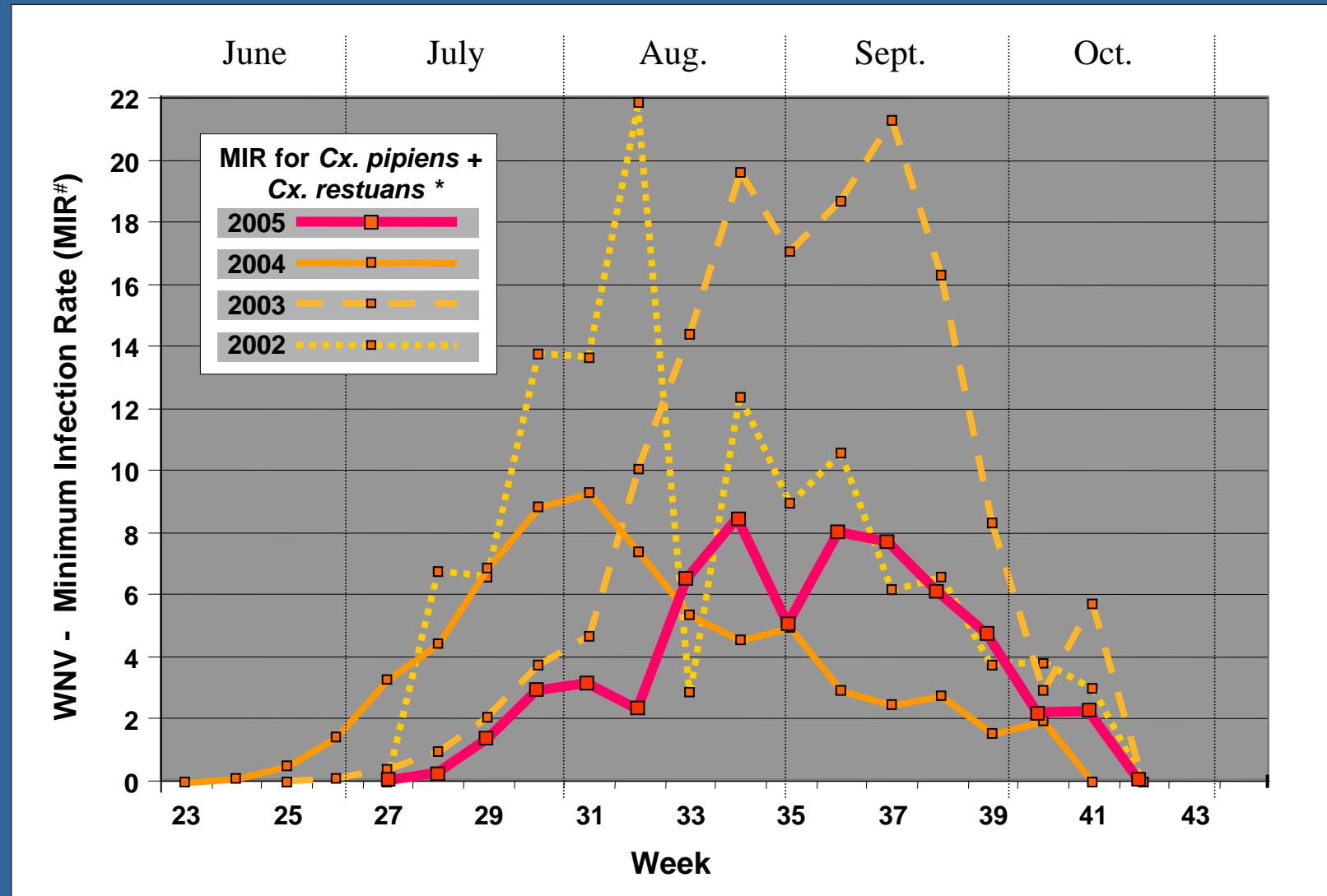
WNV activity detected in Virginia in 2005



Mosquitoes Tested for WNV in Virginia in 2005 (from a total of 10,362 pools, 343,901 mosquitoes submitted for testing)

	Mosquito Species	Pools Tested	Mosquitoes Tested	PCR Positive	PCR Equivocal	TC + PCR Positive
1	<i>Cs. mel.</i>	2,241	100,279	1		2
2	<i>Cx. pip.</i>	1,676	43,086	78	1	
3	<i>Cx. pip./res.</i>	1,395	41,266	201	3	
4	<i>Cx. res.</i>	1,577	39,894	27		
5	<i>Ae. albo.</i>	847	17,105	5	2	1
6	<i>Cx. sal.</i>	411	15,176			1
7	<i>Cx. err.</i>	272	8,895			1
8	<i>Cq. per.</i>	141	5,546			1
9	<i>An. cru.</i>	49	1,910			
10	<i>Ae. vex.</i>	43	1,601			
11	<i>Cx. spp.</i>	64	1,592			
12	<i>Oc. atl./tor.</i>	38	1,437			
13	<i>An. qua.</i>	35	1,327			
14	<i>Oc. jap.</i>	89	542			
15	<i>Oc. inf.</i>	12	463			
16	<i>Oc. tris.</i>	20	331			
17	<i>An. cru./bra.</i>	6	300			
18	<i>Oc. cana.</i>	6	211			
19	<i>Oc. tae.</i>	3	123			
20	<i>An. punc.</i>	1	26			
21	<i>Ps. cyan.</i>	1	17			
	TOTAL	8,927	281,127	312	6	6

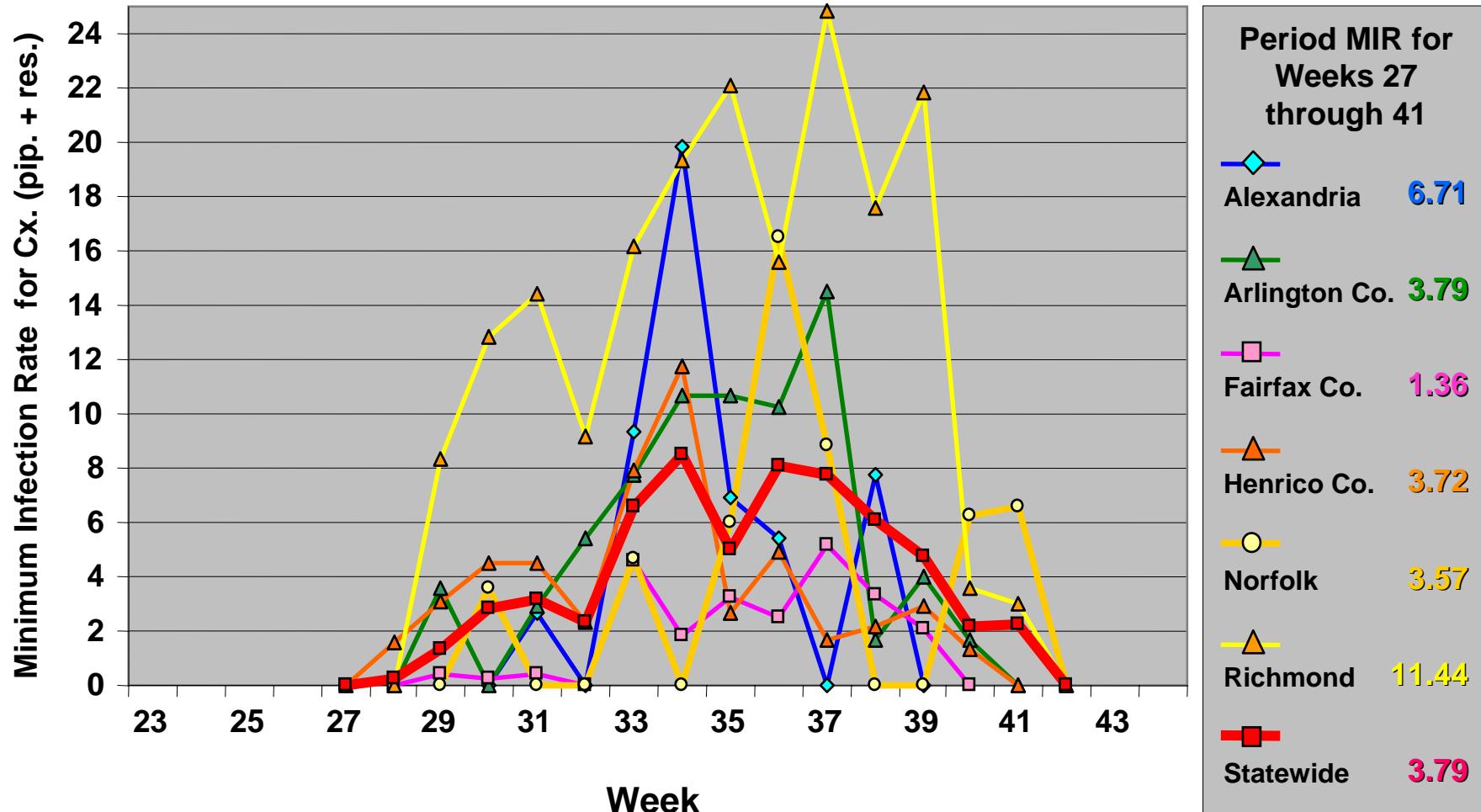
Weekly WNV minimum (mosquito) infection rate (MIR) for *Cx. (pipiens + restuans)* in Virginia on weeks 23 - 44 of 2002 through 2005.



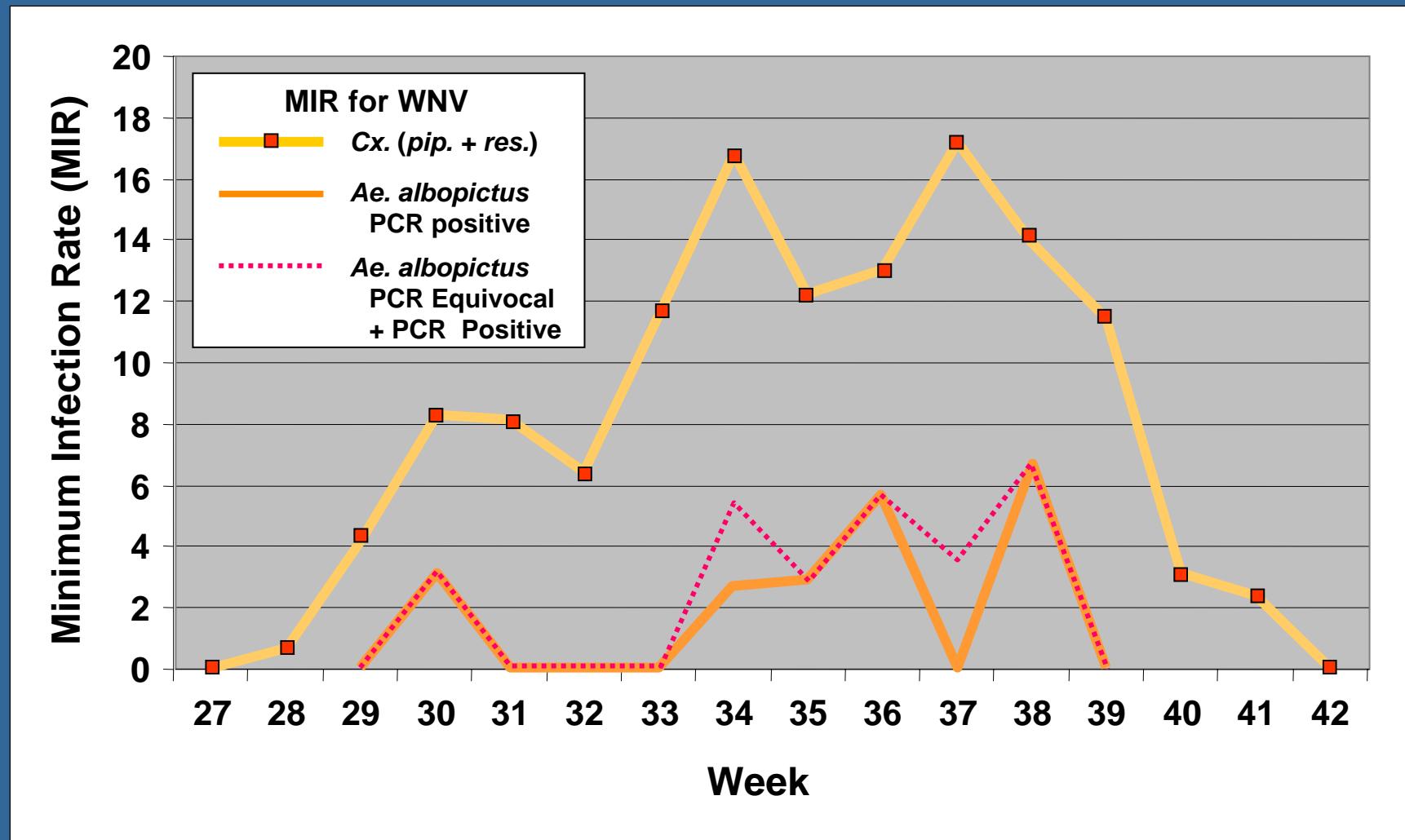
MIR = The minimum number of WNV positive mosquitoes in 1,000 tested .

* *Culex (pipiens + restuans)* data are from Northern Virginia, the Richmond Area and Tidewater Area jurisdictions.

Weekly WNV minimum (mosquito) infection rate (MIR) for *Cx. (pipiens + restuans)* in Virginia jurisdictions that had significant levels of WNV activity during weeks 23 - 44 of 2005.



WNV detected in *Cx. (pipiens + restuans)* and *Ae. albopictus* in Richmond City and Henrico County*, Virginia in 2005



* MIRs are calculated from combined data from WNV active areas of Richmond City and Henrico Co.

EASTERN EQUINE ENCEPHALITIS IN VIRGINIA IN 2005

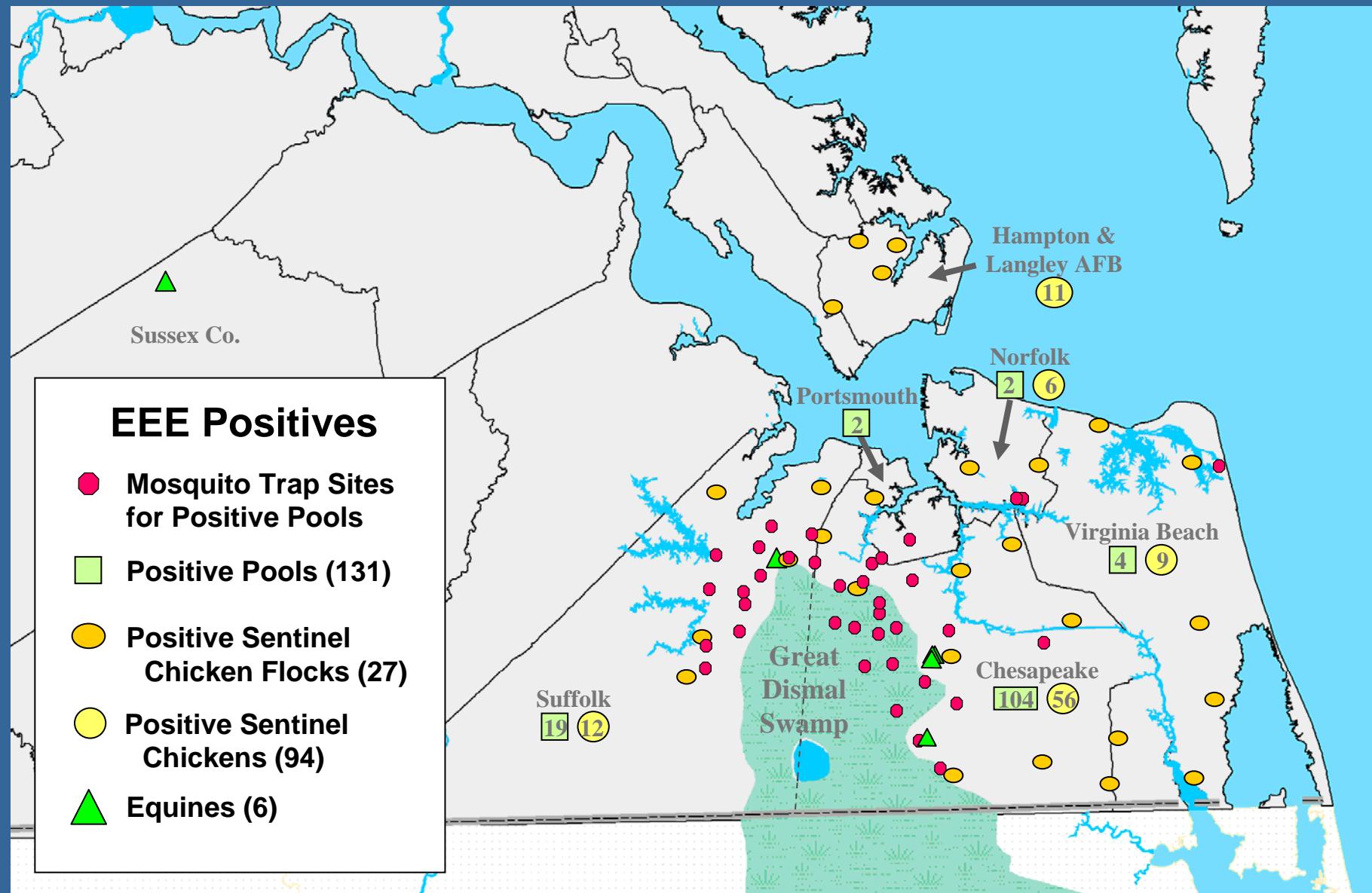
Virginia EEE Positive Totals, 2000 through 05:

	2000	2001	2002	2003	2004	2005
1. Humans:	0 cases	0 cases	0 cases	1 case (1 death)	0 cases	0 cases
2. Sentinel Chickens:	4 flocks 6 birds	2 flocks 4 birds	1 flock 1 bird	10 flocks 27 birds	12 flocks 16 birds	27 flocks 94 birds
3. Horses:	9	7	0	9	7	6
4. Mosquito Pools:	4	30	10	43	53	131

Mosquitoes Tested for EEE in Virginia in 2005 (from a total of 10,362 pools, 343,901 mosquitoes submitted for testing)

	Mosquito Species	Pools Tested	Mosquitoes Tested	PCR Positive	PCR Equivocal	TC + PCR Positive
1	<i>Cs. mel.</i>	2,750	123,592	130	1	11
2	<i>An. cru.</i>	507	22,166			1
3	<i>Cq. per.</i>	373	15,935			2
4	<i>Cx. sal.</i>	395	14,604			
5	<i>Cx. err.</i>	200	6,651			
6	<i>Ae. albo.</i>	256	5,333			
7	<i>An. qua.</i>	58	2,307			
8	<i>Cx. pip.</i>	69	1,944	1		2
9	<i>Oc. atl./tor.</i>	49	1,838			
10	<i>Ae. vex.</i>	44	1,633			
11	<i>An. cru./bra.</i>	20	993			
12	<i>Ps. col.</i>	21	926			
13	<i>Cx. res.</i>	25	730			1
14	<i>Oc. inf.</i>	12	463			
15	<i>Oc. cana.</i>	6	211			
16	<i>Cx. pip./res.</i>	6	123			
17	<i>Oc. tae.</i>	3	123			
18	<i>Ps. cyan.</i>	1	17			
19	<i>Cx. spp.</i>	1	10			
TOTAL		4,796	199,599	131	1	17

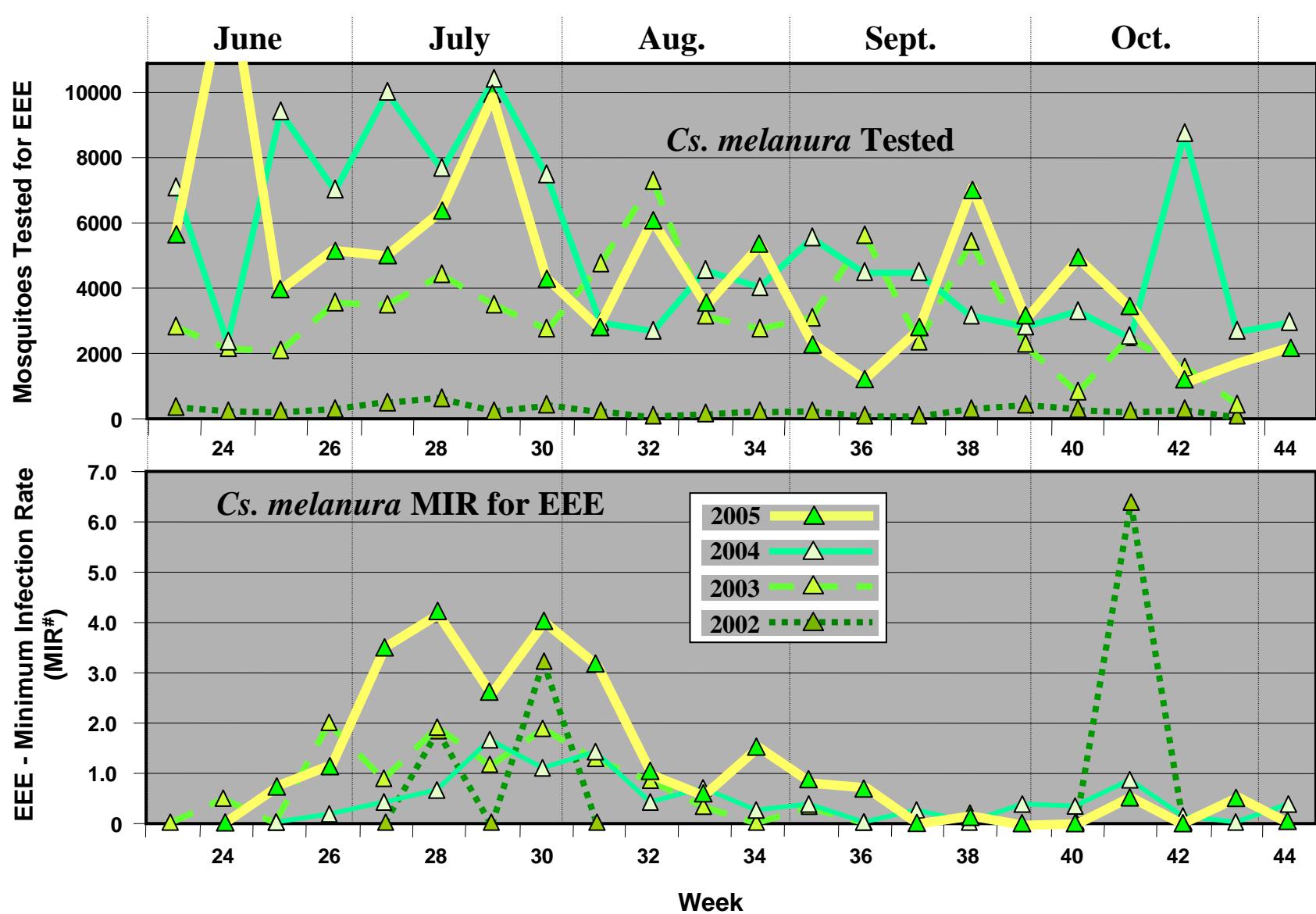
EEE activity detected in Virginia in 2005



EEE Positives

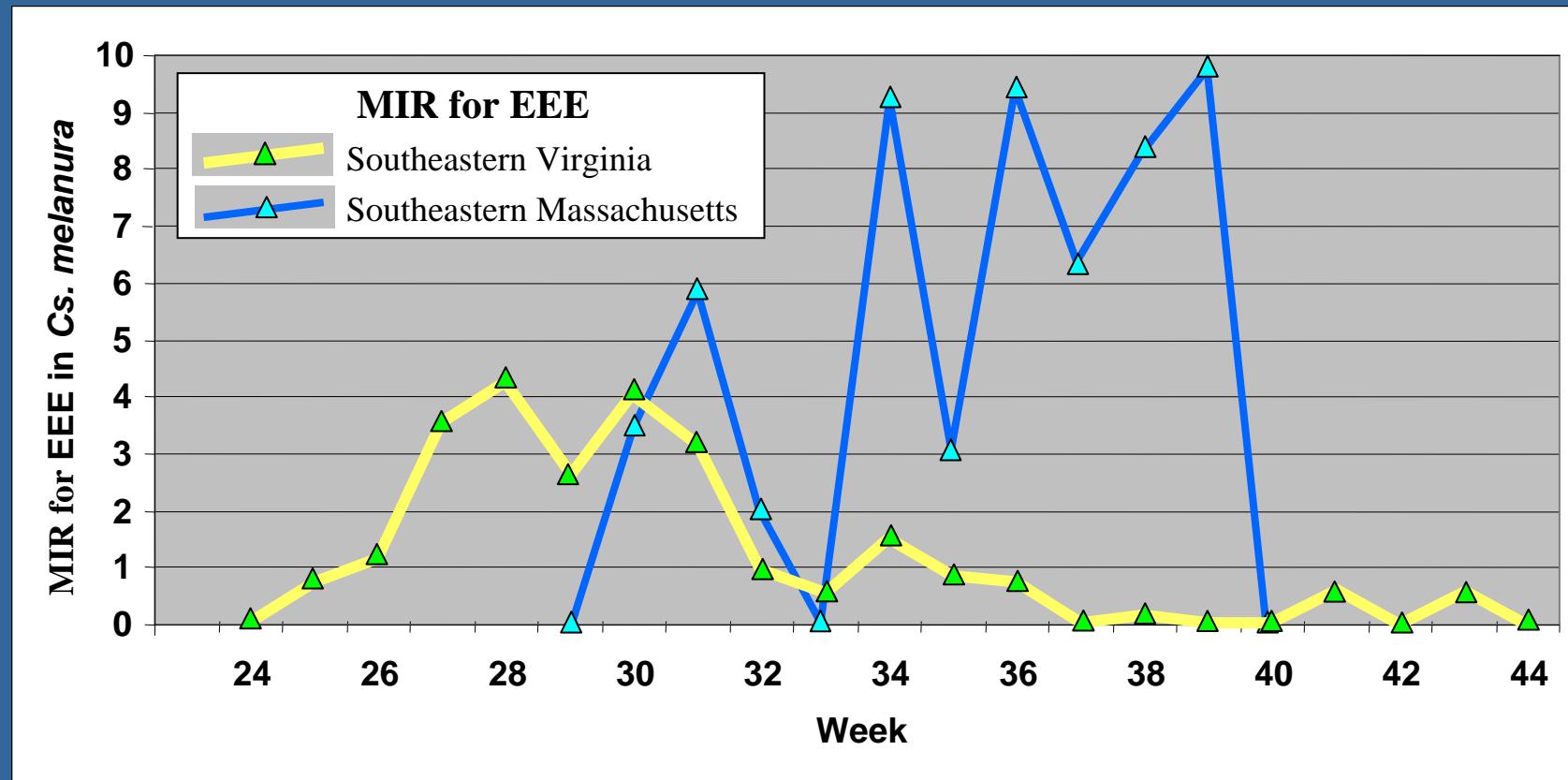
- Mosquito Trap Sites for Positive Pools
- Positive Pools (131)
- Positive Sentinel Chicken Flocks (27)
- Positive Sentinel Chickens (94)
- Equines (6)

Number of *Cs. melanura* tested, and weekly minimum infection Rate (MIR[#]) detected in Virginia's Hampton Roads region in 2005 vs. 2002, 03 and 04.



[#] MIR = The minimum number of EEE positive mosquitoes present in 1,000 tested .

Weekly minimum infection rate (MIR) for EEE in *Cs. melanura* in 2005: Virginia's Hampton Roads region, compared to that for southeastern Massachusetts (In 2005 Virginia had no human EEE cases whereas Massachusetts had 4 human EEE cases).



Period MIR - for the first ten weeks that positive mosquitoes were detected in each state

MIR = 2.32 - southeastern VA
MIR = 5.28 - southeastern MA

Acknowledgements:

Laboratories:

Norfolk Department of Public Health Laboratory (NDPHL)

Virginia Dept. of Agriculture and Consumer Services (VDACS) - Veterinary Laboratories

Virginia Division of Consolidated Laboratory Services (DCLS) Laboratory

Surveillance Programs:

Alexandria Dept. of Health - Vector Control

Arlington County Dept. of Health - Vector Control

Chesapeake Commission for Mosquito Control

Clarke Mosquito Control Company

Fairfax County Dept. of Health - Vector Control

Hampton Vector Control

Henrico County Vector Control

Langley Air Force Base - Vector Control

Loudoun County Dept. of Health

Newport News Vector Control

Norfolk Dept. of Health - Vector Control

Portsmouth Vector Control

Prince William County Vector Control

Suffolk Vector Control

Virginia Beach Vector Control

Virginia Dept. of Health (VDH) - Division of Zoonotic and Environmental Epidemiology

VDH - Regional and District Epidemiologists